

Partnering to Collect Improved Human Exposure Measurement Data

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Partnering allows complex environmental challenges to be efficiently addressed by leveraging resources and scientific expertise. The U.S. Environmental Protection Agency's (U.S. EPA) Office of Research and Development (ORD) routinely collaborates with other federal, state, and local government organizations, as well as academia and international groups, to address research questions related to pesticide and particulate matter exposures in non-occupational environments.

This poster highlights four collaborations undertaken since 2001.

- A community-based study in the greater Jacksonville, FL, area (JAX). The ORD collaborated

with the Duval County Health Department (DCHD) and the Centers for Disease Control and Prevention (CDC) to characterize young children's potential exposures to pesticides in residential environments.

- An inter-agency effort to characterize contaminants in child care centers (CCC). The ORD collaborated with the U.S. Department of Housing and Urban Development (HUD) and the U.S. Consumer Product Safety Commission (CPSC) to measure levels of pesticides, lead, and allergens in licensed institutional child care centers randomly selected for participation in this national survey.
- The Detroit Exposure and Aerosol Research Study (DEARS). The ORD is currently collaborating with the University of Michigan, the Community Action Against Asthma (a Detroit community organization), the Michigan Department of Environmental Quality, and Health Canada to conduct a three-year field monitoring study in Detroit, MI. The purpose of this study is to characterize exposure relationships for air toxics, particulate matter (PM) components, PM from specific sources, and criteria pollutants. Modeling analyses will also be conducted.
- The American Healthy Homes Survey (AHHS). Together with the Office of Pollution Prevention and Toxics (OPPT) and HUD, the ORD is performing a national survey of housing-related hazards. In addition to measuring lead and allergens, this project will provide the first ever national estimates of housing-related potential health hazards, such as pesticides, mold, and arsenic levels, and the potential for unintentional injury.

The field work for JAX and CCC was completed in 2001 and data analyses and reporting are ongoing. The DEARS is a three-year study which began in July, 2004, and has completed the first year of monitoring for summer (July-August, 2004) and winter (January-March, 2005). The AHHS is expected to begin field monitoring in the next year.

The data generated in these studies are needed to understand whether and how exposures are occurring, to develop improved distributions of exposure and assessments of risk, and to examine changes in the occurrence and magnitude of the exposures and risks over time. Furthermore, results from the DEARS will be leveraged with other complementary studies that are being conducted in the Detroit area, such as health effects and toxicology studies related to air pollution. The pesticide data will be used by the U.S. EPA program offices to support the Agency's re-registration efforts.

Through these partnerships and collaborations, the ORD will obtain valuable information on a vast number of chemicals of interest to the Agency. Results from these studies will provide improved approaches for estimating exposures, a better understanding of children's aggregate exposures, a better understanding of the impact of pyrethroid pesticide use after discontinuing most OP indoor pesticide uses, information on the adequacy of ambient monitoring for estimating PM and air toxics exposures, robust databases available to the scientific community, and data that can directly support the Agency's regulatory efforts.

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